



**Shan Hoel**

**(TransGroup Worldwide Logistics – EPA SmartWay Partner)**



# Green Issues

## They're All Over the News



# Global Warming – Do You Believe?

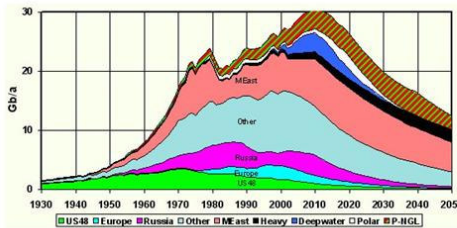
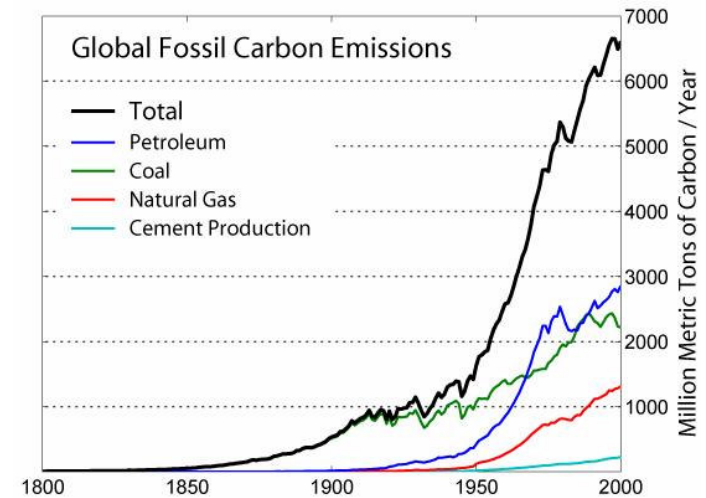
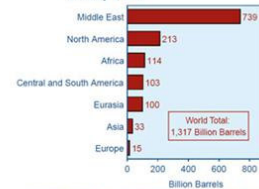
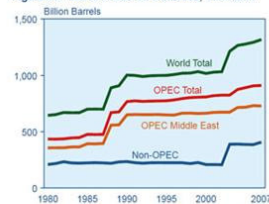


Figure 39. World Proved Oil Reserves by Geographic Region as of January 1, 2007



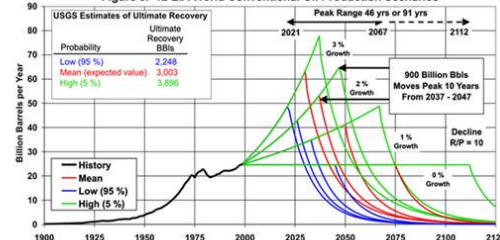
Source: "Worldwide Look at Reserves and Production," Oil & Gas Journal Vol. 104, No. 47 (December 18, 2006), pp. 24-25.

Figure 38. World Crude Oil Reserves, 1980-2007



Note: Reserves include crude oil (including lease condensates) and natural gas plant liquids.  
Sources: 1980-1993: "Worldwide Oil and Gas at a Glance," International Petroleum Encyclopedia (Tulsa, OK: PennWell Publishing, various issues). 1994-2007: Oil & Gas Journal (various issues).

Figure 3. 12 EIA World Conventional Oil Production Scenarios



Source: Energy Information Administration  
Note: U.S. volumes were added to the USGS foreign volumes to obtain world totals.

**Belief is Irrelevant**

**Climate Change  
= Business Climate  
Change!**

# *Overview*





# *Overview*

## **SmartWay Transport Partnership Program Components**

**Partnerships** – EPA packaging existing government partnerships & programs

- Over 640 Partners
  - Carriers, Shippers, Logistics, Affiliates, Rail, plus vendors
  - Includes most of the top trucking companies

**Tools and models** - allowing companies to:

- Measure multimodal transportation footprint
- Project emission reduction impacts of technology, strategy and modes

**Technology Demonstration-** Advance new technologies/fuels

**Product Certification** – SmartWay Truck and SmartWay Vehicles

**Financial Incentives-** access to capital, loan guarantees, public-private capital

# USEPA SmartWay FLEET Model

Microsoft Excel

File Edit View Insert Format Tools Data Window Help Adobe PDF

Type a question for help

C13    =AFCurrent!C14

fleet\_model\_version1 d.xls [Read-Only]

	A	B	C	D	E	F	G	H	I	J	K	L
1	Carrier Information	Current Fleet Evaluation	Current Fleet Summary	Action Plan Evaluation	Action Plan Summary	Annual Update Evaluation	Annual Update Summary	Print	Zip File for Mailing			
2	<b>Fleet Efficiency Evaluation</b>									0	gallons	
7	<b>Show Video Tutorial</b>		<b>Straight Trucks</b>							<b>Print This Table</b>		
8			Total # of trucks	Average Miles per truck per year	Total Miles	Total Fuel Consumption Gallons	Average payload (tons) per trip	Average Idling Hours per truck per year	Total Idling Hours			
9												
10												
11	<b>Short Haul</b>	Diesel			0					0		
12		Gasoline			0					0		
13		Alternative Fuel	0	0	0	0	0	0	0	0		
14	<b>Long Haul</b>	Diesel			0					0		
15		Gasoline			0					0		
16		Alternative Fuel	0	0	0	0	0	0	0	0		
17			<b>Combination Trucks</b>									
18			Total # of trucks	Average Miles per Truck per Year	Total Miles	Total Fuel Consumption Gallons	Average payload (tons) per trip	Average Idling Hours per truck per year	Total Idling Hours			
19												
20												
21	<b>Short Haul</b>	Diesel			0					0		
22		Gasoline			0					0		
23		Alternative Fuel	0	0	0	0	0	0	0	0		
24	<b>Long Haul</b>	Diesel			0					0		
25		Gasoline			0					0		
26		Alternative Fuel	0	0	0	0	0	0	0	0		
27	<b>Totals</b>	Diesel	0		0	0	0.00			0		
28		Gasoline	0		0	0	0.00			0		
29		Alternative Fuel	0		0	0	0.00			0		
30	<b>All vehicles</b>		0		0	0	0.00			0		

Draw AutoShapes

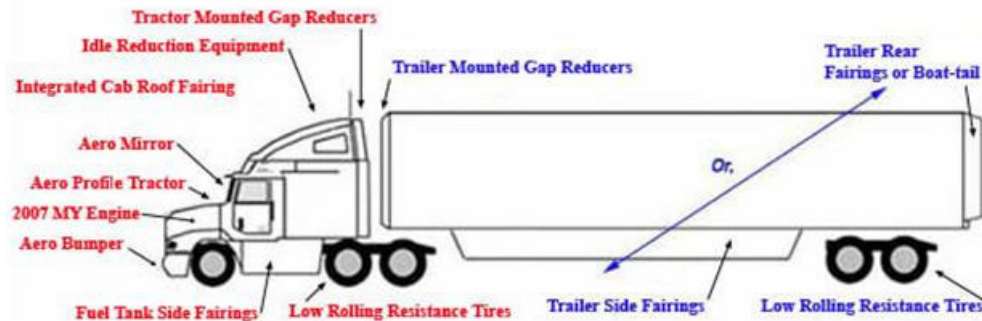
Ready Circular NUM

# Partner & Product Labeling



## Tractor Strategies ~12% Reduction

## Trailer Strategies ~11% Reduction



Check Out EPA's Green Vehicle Guide

[www.epa.gov/greenvehicles](http://www.epa.gov/greenvehicles)



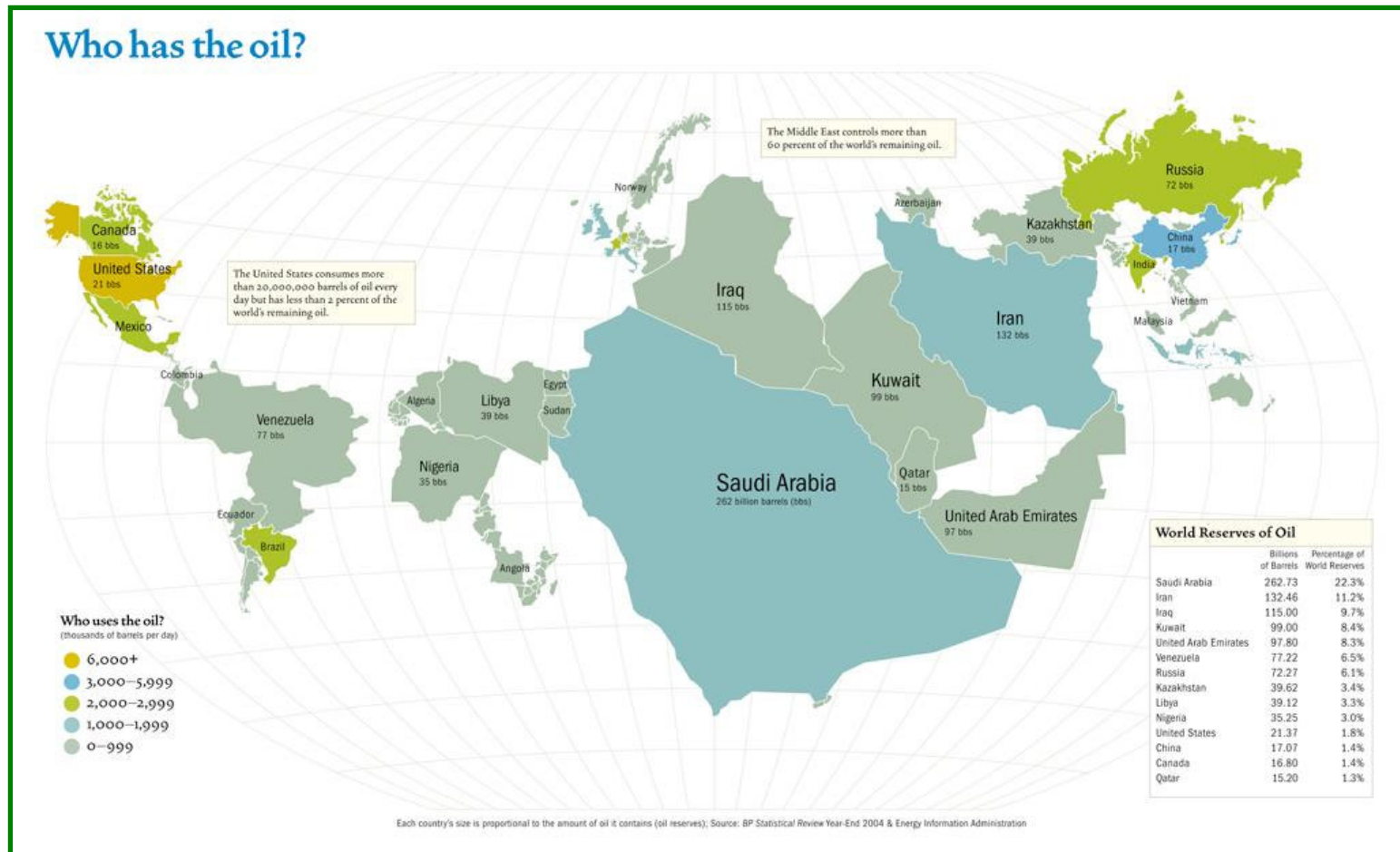
# ***Green Supply Chain?***

**What does **Green** Mean in  
Regards to Supply Chains and  
Why is Data Like this Important?**



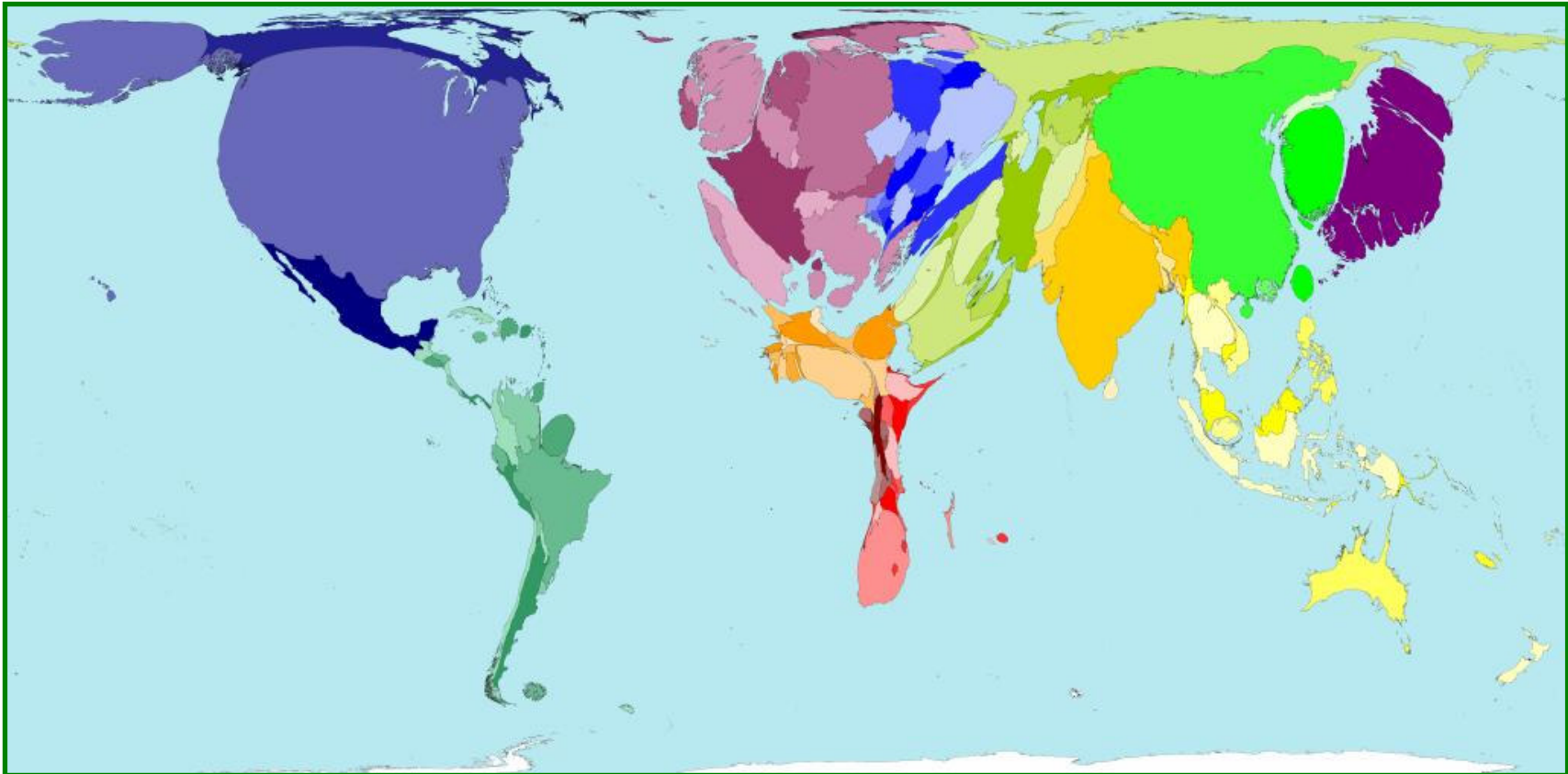
# Another View of the World

## The World According to Oil Reserves



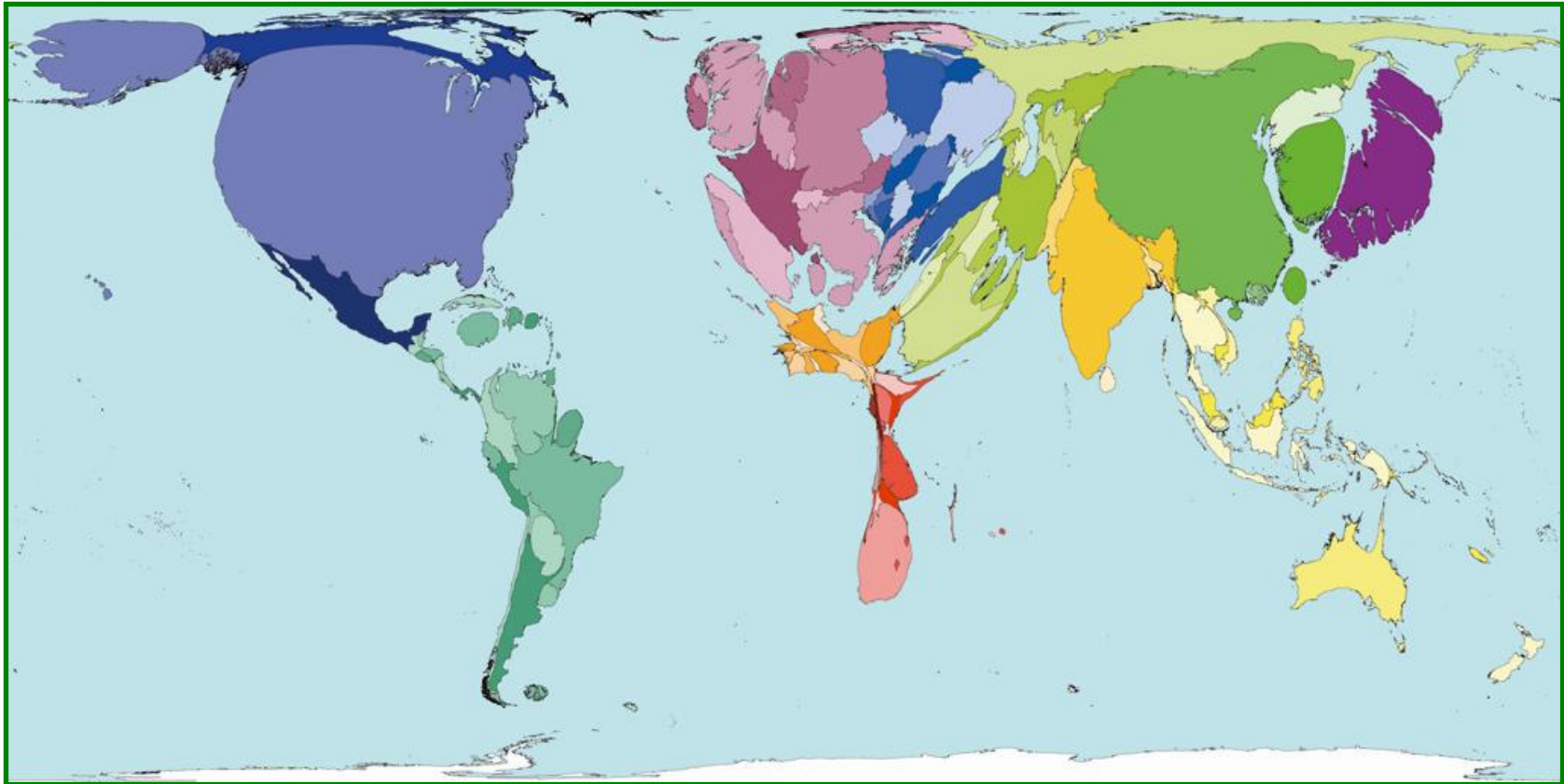
# ***Another View of the World***

## **The World According to Fuel Usage**



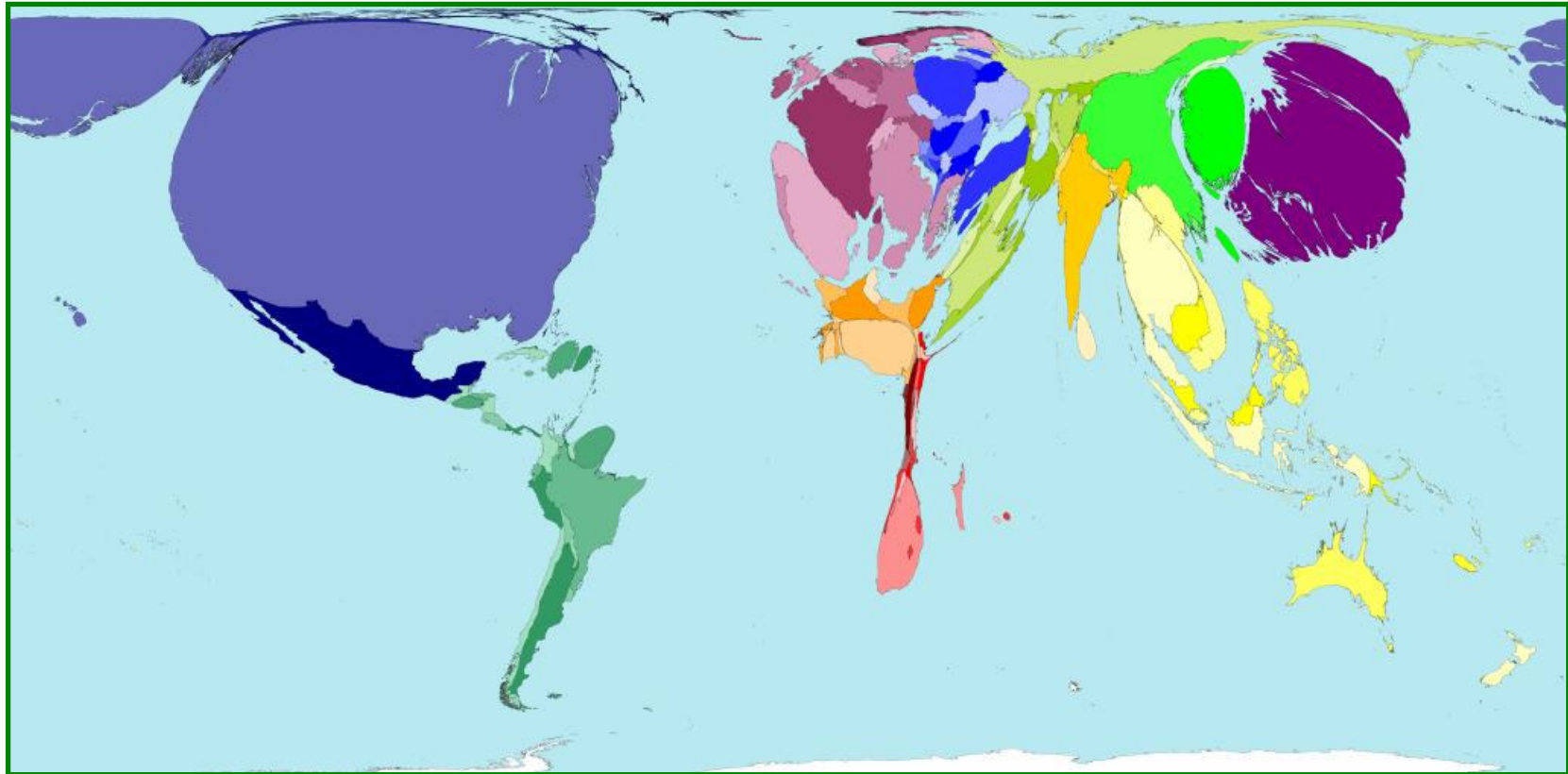
# ***Another View of the World***

## **The World According to Green House Gases (GHGs)**



# ***Another View of the World***

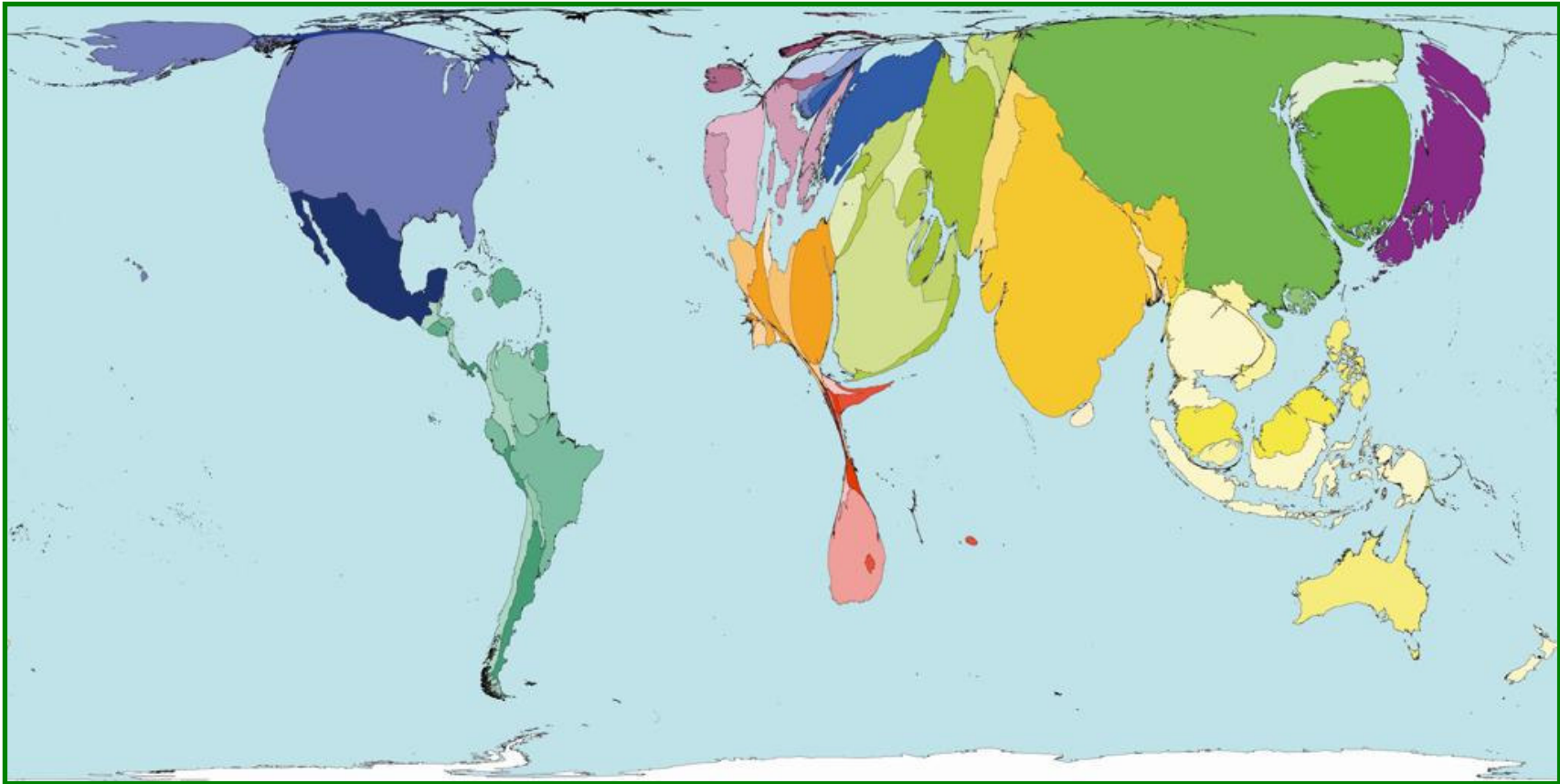
## **The World According to Vehicle Freight Miles**





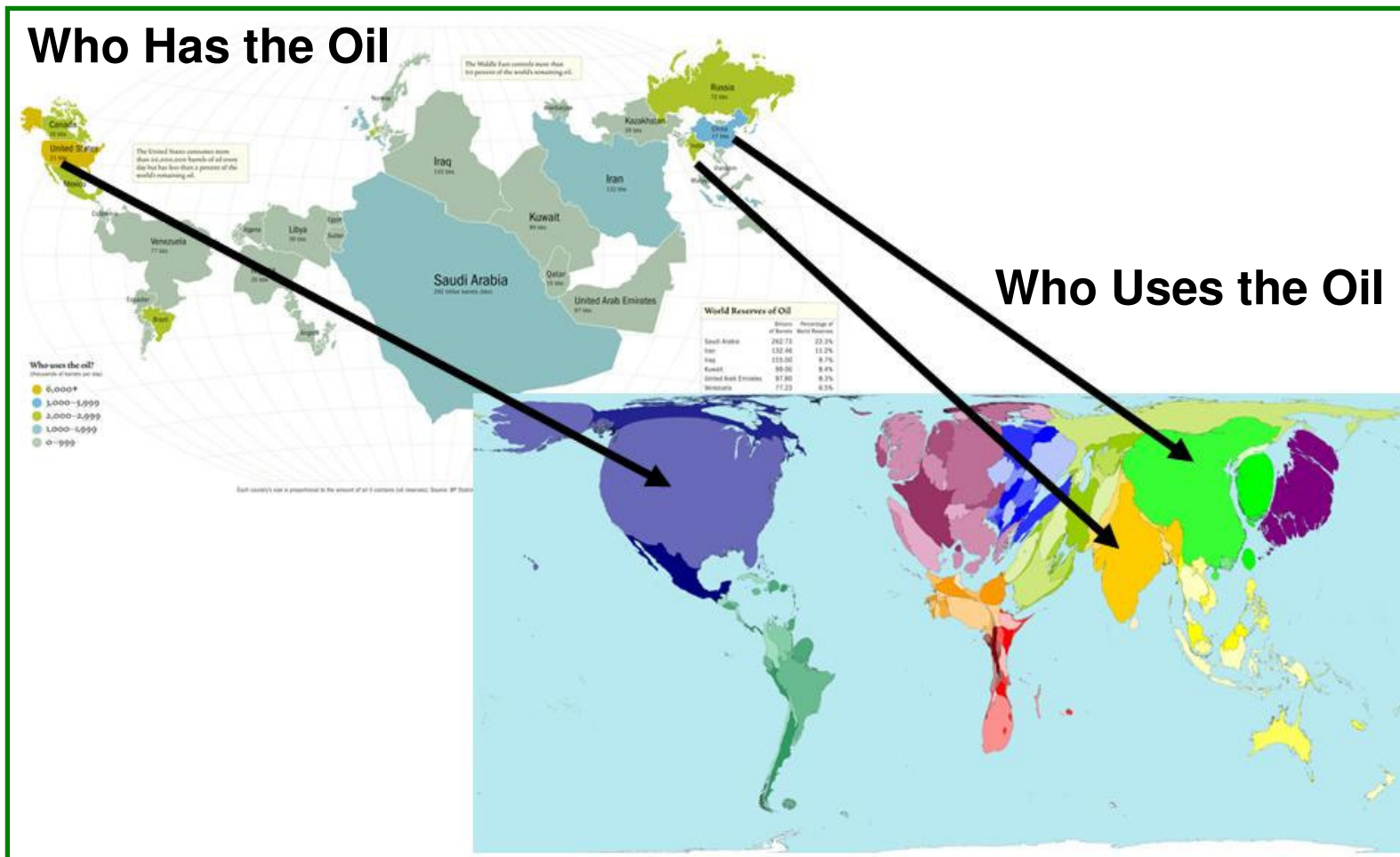
# ***Another View of the World***

## **The World According to Growth in CO<sub>2</sub> (1980 to 2000)**



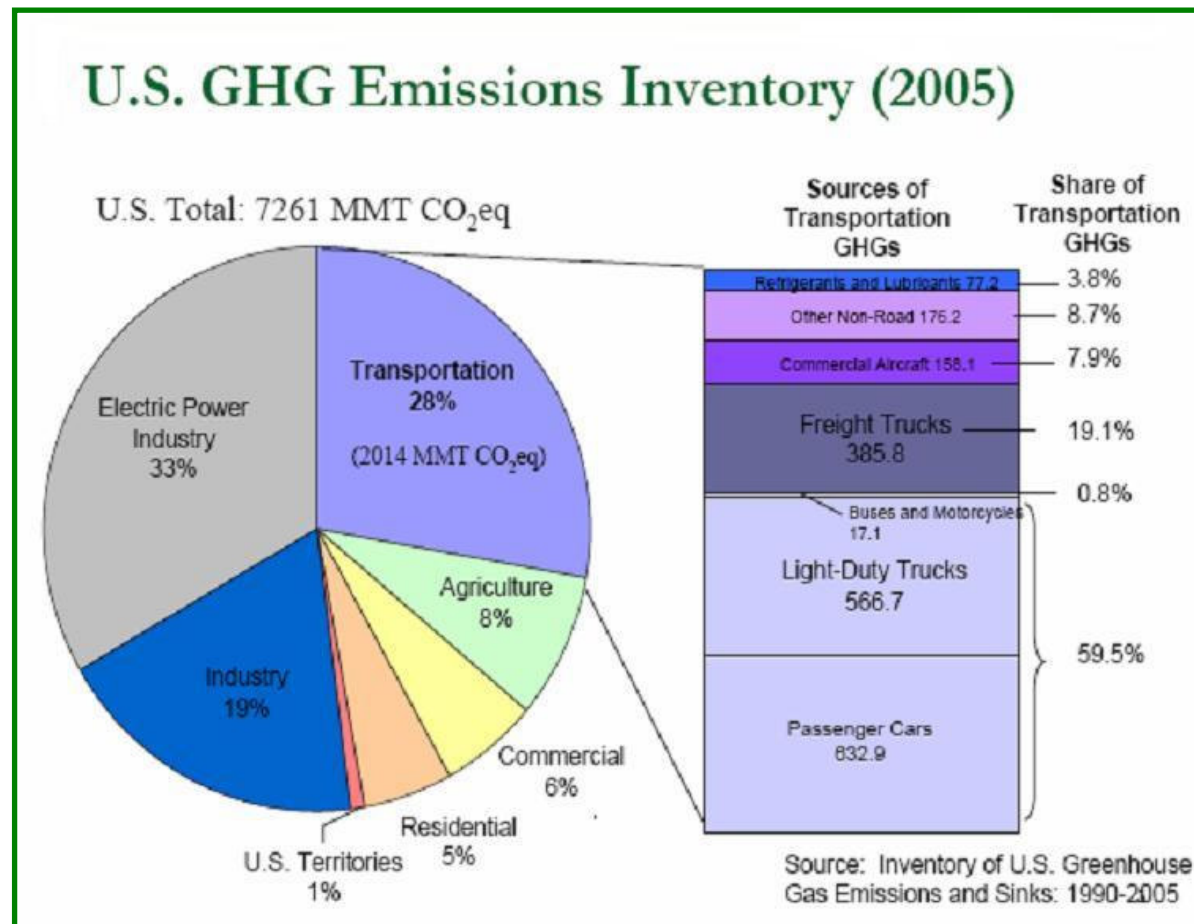
# Another View of the World

## Production Vs. Consumption



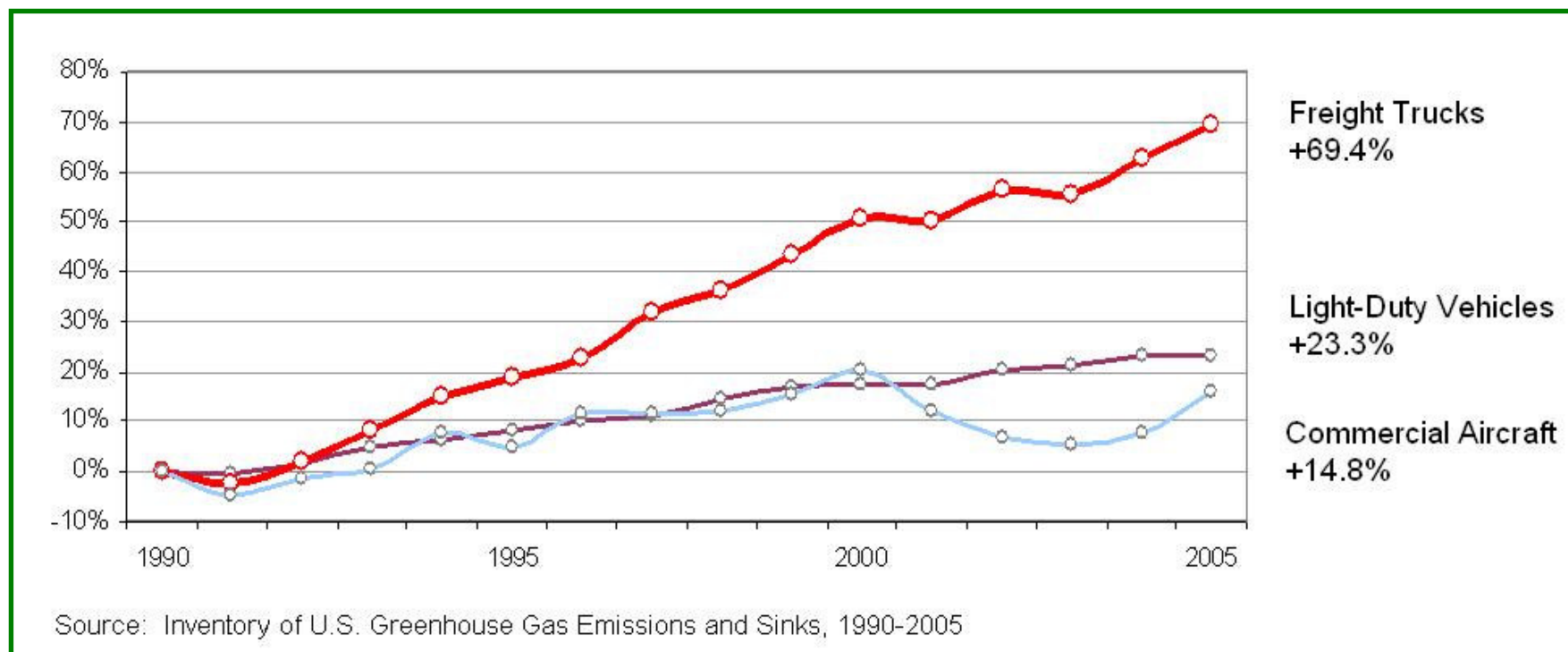
# Overall GHG

## Where do the Emissions Come From?



# ***U.S. Transportation GHG***

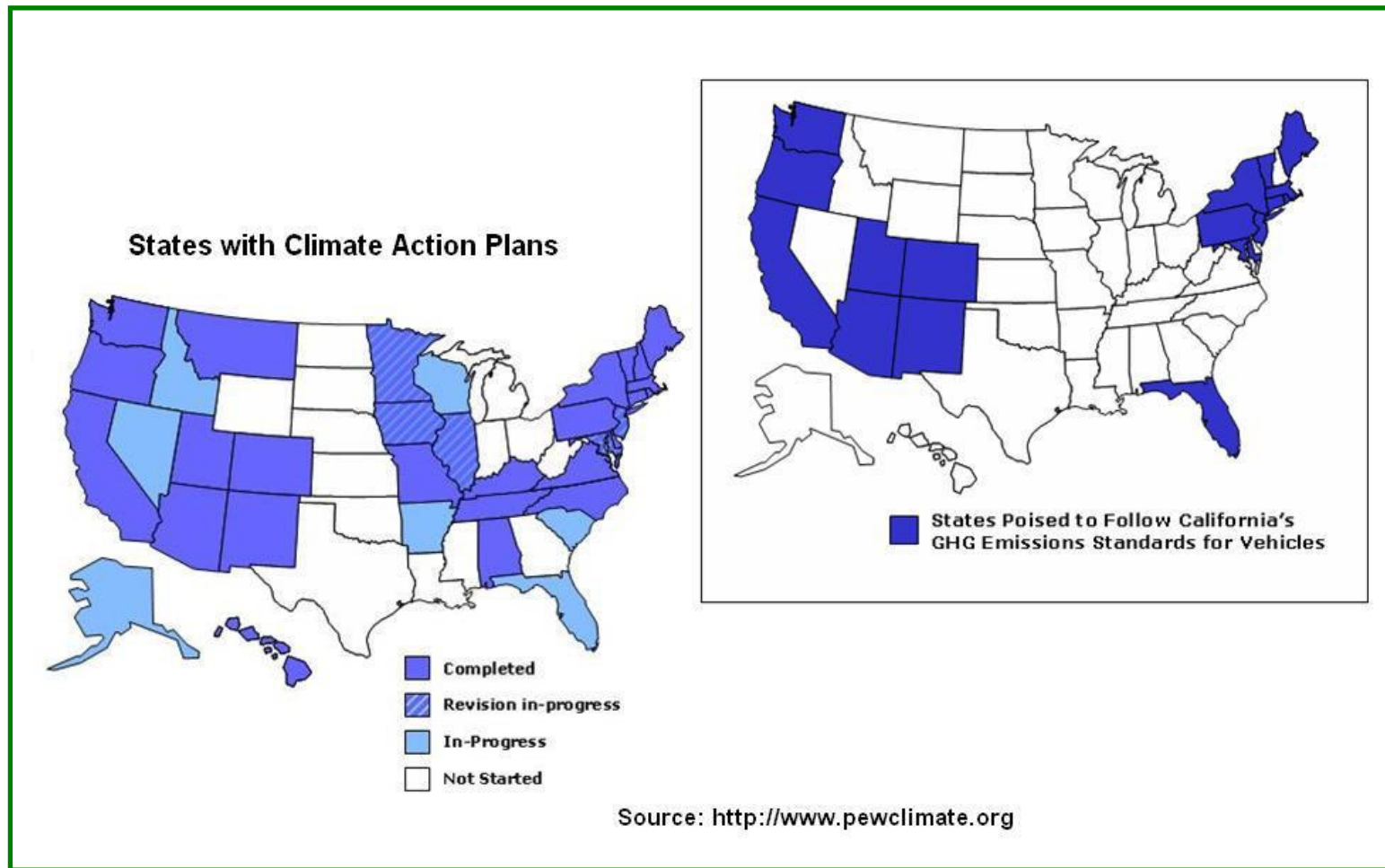
## **U.S. Transportation GHG Emissions Growth (1990 to 2005)**





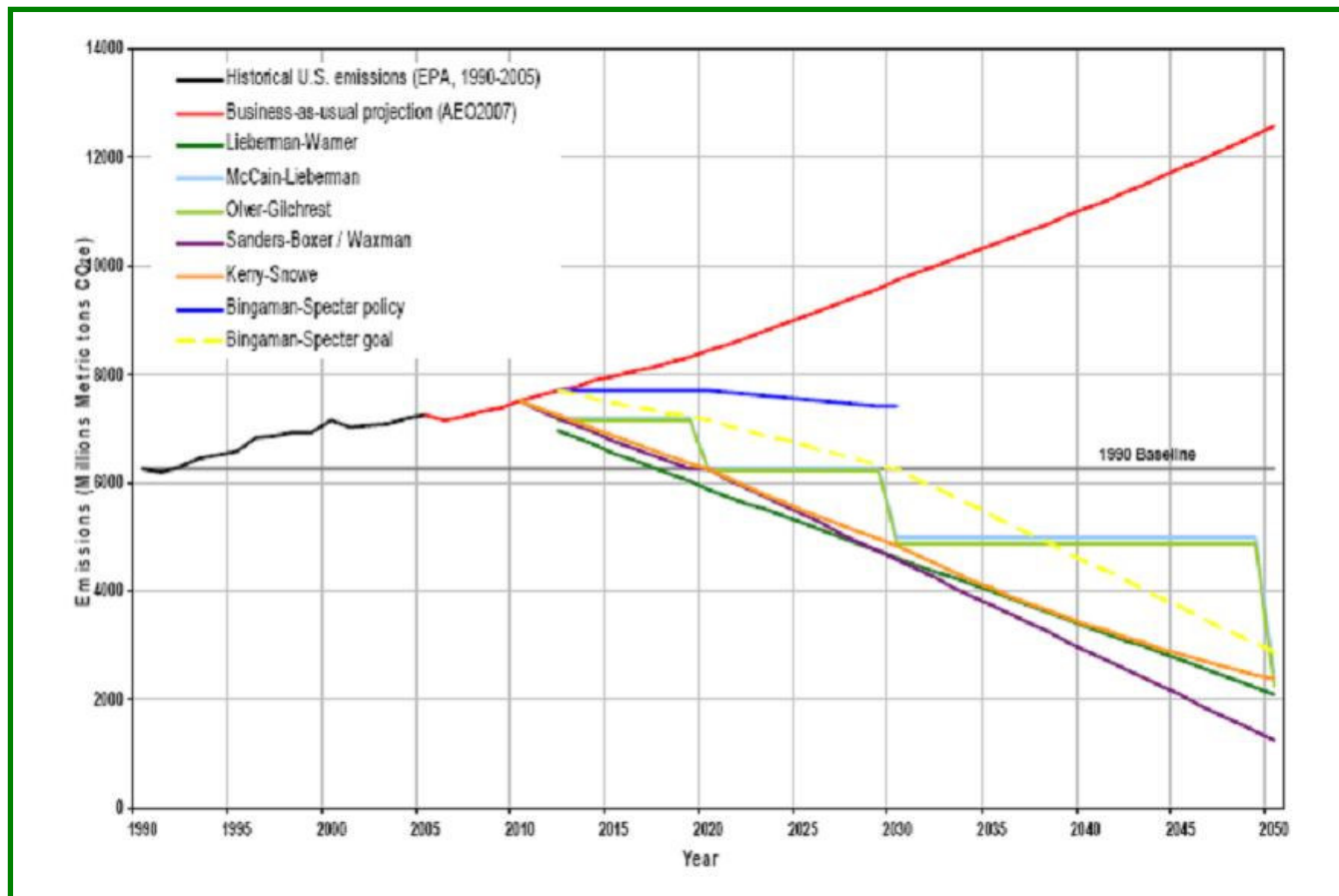
# ***Legislation on Climate Change?***

## **State Measures on Climate Change**



# ***Legislation on Climate Change?***

## **GHG Emissions – Projected Business as Usual vs. Proposed Legislation**



# ***Green Initiatives = Sustainability Initiatives***

**The Greening in Transportation Footprint is Equally  
Environmental and Monetary**



In Corporate  
Vernacular....

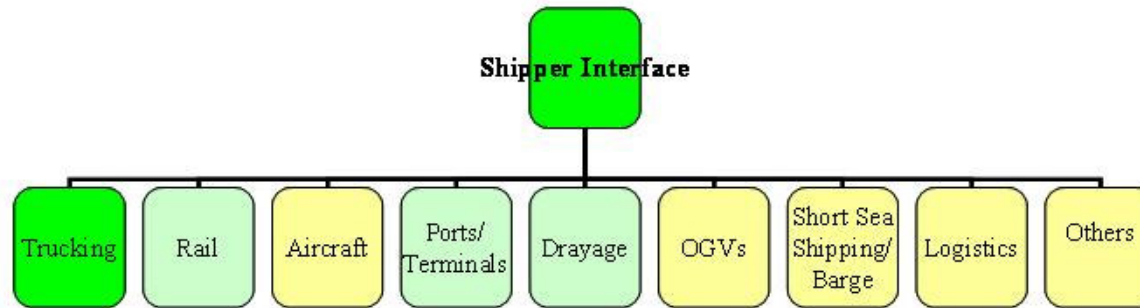
**Sustainability** is  
a synonym for  
**Survivability**

# ***The Demand for a Green Supply Chain Model***

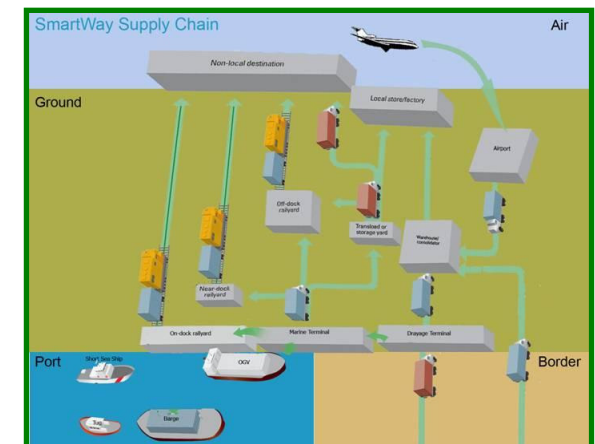
- Demand for Multimodal CO<sub>2</sub> Model from Industry
  - Demand for CO<sub>2</sub> inventory (footprint)
  - Some interest in NO<sub>x</sub> and PM
  - Also a demand for efficiency ratings, and optimization
    - Inventory alone doesn't allow for improvement
  - SmartWay Transport Partnership must evolve into multimodal operations
- Many Stakeholders are asking EPA to assume a leadership role
  - Desire for a Federal program
  - Consistent, global methodology
  - Eventual need for a multi-modal global methodology and model
- Climate is High Profile now
  - Industry needs to quickly inventory, benchmark, and achieve improvements
  - Multiple private and Government players are vying for a piece of the “Climate market”



# Basic Model Architecture



- Modular Construction:
- Development will use the Charter Partner approach utilizing industry feedback
- Shipper component
  - Will draw its data from the carrier modules
  - Interface will give shippers data to influence their freight decisions and pressure carriers to join and/or improve
- Carrier Component
  - Based on a streamlined current Carrier FLEET model
  - We develop a template and then development partners create the modules
  - We guide and review the work
- **Adaptable to be included in commercial software packages**



# Example of Model Outputs

## Part 1-A Basic FUEL USAGE

	Tailpipe		Fuel Life Cycle		System Lifecycle		Reactivity		National Security Score % Domestic Global Source Alt Fuel
ONROAD	CO2	CH4	CO2	CH4	CO2	CH4	CO2	CH4	
Diesel									
Biodiesel									
Gasoline									
Ethanol									
CNG (b5)									
CNG (r5)									
LPG									
LNG									
Other									
OCEAN, GSS, Barge	Tailpipe		Fuel Life Cycle		System Lifecycle		Reactivity		National Security Score % Domestic Global Source Alt Fuel
	CO2	CH4	CO2	CH4	CO2	CH4	CO2	CH4	
Diesel#2									
Diesel#3									
Diesel#4									
Diesel#5									
Diesel#6									
Low Sulfur Diesel (PPM range=)									
Low Sulfur Diesel (PPM range=)									
Low Sulfur Diesel (PPM range=)									
Biodiesel									
Gasoline									
Ethanol									
LPG									
LNG									
Other									
AIR	Tailpipe		Fuel Life Cycle		System Lifecycle		Reactivity		National Security Score % Domestic Global Source Alt Fuel
	CO2	CH4	CO2	CH4	CO2	CH4	CO2	CH4	
100/130									
100LL									
82UL									
80/67									
JET A									
JET A-1									
JET B									
Air Diesel									

Tailpipe

Life Cycles

Infrastructure Life Cycles

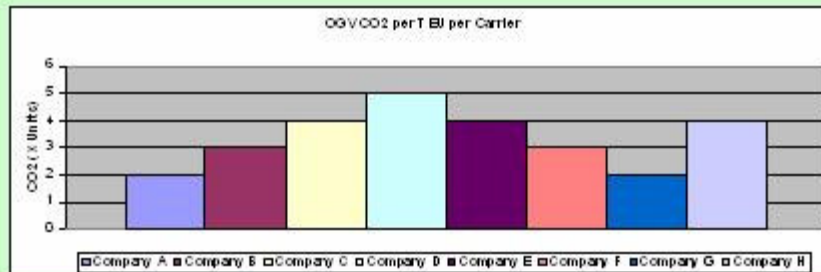
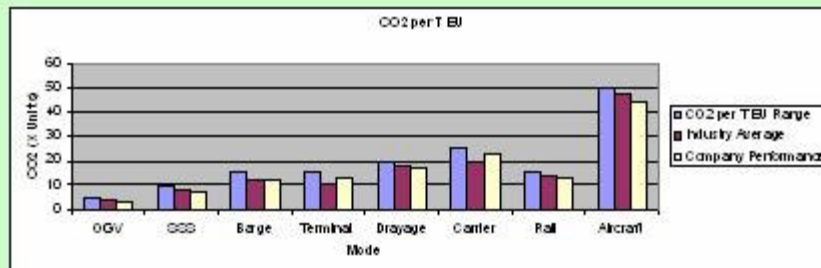
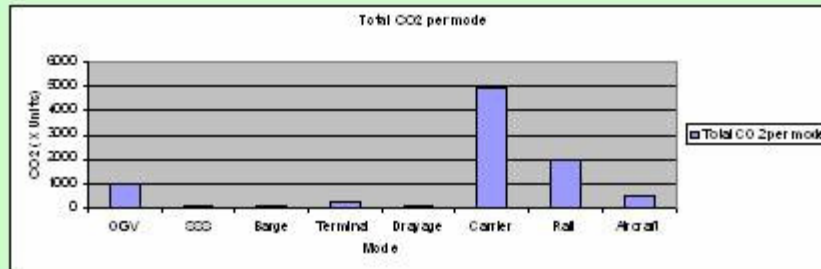
Reactivity

National Security

# Comparisons and Diagnostics

## SmartWay Partnership ENVIRONMENTAL SUPPLY CHAIN ASSESSMENT MODEL

LB/EI ONE OUTPUT 3



Results shown for all carriers in all modes

Total Company Inventory

Inventory by mode versus industry averages and ranges

Comparisons between companies

Others

# ***Contact Info***



[www.epa.gov/smartway](http://www.epa.gov/smartway)

[smartway\\_transport@epa.gov](mailto:smartway_transport@epa.gov)

phone center (734) 214-4767

Dick Kridler (734) 214-4644  
[kridler.dick@epa.gov](mailto:kridler.dick@epa.gov)

Matthew Payne (734) 214-4576  
[Payne.matthew@epa.gov](mailto:Payne.matthew@epa.gov)

Sarah Froman (202) 343-9652  
[froman.sarah@epa.gov](mailto:froman.sarah@epa.gov)

Shan Hoel – TransGroup  
(SmartWay Partner)  
(206) 577-4803  
[shan.hoel.hq@transgroup.com](mailto:shan.hoel.hq@transgroup.com)